

What is claimed is:

1. A fluoropolymer that is melt-processible and thermoplastic and that has a melting point between 100°C and 320°C, said fluoropolymer being derived from (a) one or more gaseous fluorinated monomers, (b) one or more modifiers selected from (i) olefins having a bromine or iodine atom bonded to a carbon of the double bond of the olefin, (ii) olefins corresponding to formula (I):



wherein each X^a independently represents hydrogen, fluorine, bromine, chlorine or iodine, R_f is a perfluoroalkylene group, a perfluorooxyalkylene group or a perfluoropolyether group and (iii) mixtures thereof; and (c) optionally one or more comonomers selected from non-gaseous fluorinated monomers and non-fluorinated monomers, said fluoropolymer having long chain branches.

2. A fluoropolymer according to claim 1, wherein said gaseous fluorinated monomers are selected from tetrafluoroethylene, vinylidene fluoride, chlorotrifluoroethylene, hexafluoropropylene, perfluorovinyl ethers and mixtures thereof.

3. A fluoropolymer according to claim 1 wherein said olefin having a bromine or iodine atom bonded to a carbon of the double bond of the olefin corresponds to the general formula:



wherein each X may be the same or different and is selected from the group consisting of hydrogen, F, Cl, Br and I, with the proviso that at least one X represents Br or I, Z represents hydrogen, F, Cl, Br, I, a perfluoroalkyl group, a perfluoroalkoxy group or a perfluoropolyether group.

4. A fluoropolymer according to claim 1 wherein X is selected from hydrogen, F and Br with the proviso that at least one X represents Br and Z is hydrogen, F, Br, a perfluoroalkyl group or a perfluoroalkoxy group.

5. A fluoropolymer according to claim 1 wherein said fluoropolymer is a perfluorinated polymer.

6. A fluoropolymer according to claim 1 wherein said fluoropolymer comprises units deriving from tetrafluoroethylene and hexafluoropropylene or comprises units deriving from tetrafluoroethylene and a perfluorinated vinyl ether.

7. Method for making a fluoropolymer that is melt-processible and thermoplastic and that has a melting point between 100°C and 320°C, comprising a polymerization of (a) one or more gaseous fluorinated monomers with (b) one or more modifiers selected from (i) olefins having a bromine or iodine atom bonded to a carbon of the double bond of the olefin, (ii) olefins corresponding to formula (I):



wherein each X^a independently represents hydrogen, fluorine, bromine, chlorine or iodine, R_f is a perfluoroalkylene group, a perfluorooxyalkylene group or a perfluoropolyether group and (iii) mixtures thereof; and (c) optionally one or more comonomers selected from non-gaseous fluorinated monomers and non-fluorinated monomers, whereas the amounts of said gaseous fluorinated monomers and optional comonomers are selected such so as to obtain a melt-processible thermoplastic fluoropolymer having a melting point between 100 and 320°C and wherein said one or more modifiers are used in an amount of not more than 0.3% by weight based on the total weight of monomers fed to the polymerization.

8. Method according to claim 7 wherein the resulting fluoropolymer is a perfluoropolymer and wherein subsequent to the polymerization, the resulting perfluoropolymer is subjected to a fluorination step.

9. Use of a fluoropolymer as defined in claim 1 in the extrusion of an article.

10. Use according to claim 9 wherein said article is a wire or a cable.